Psychology 202

Introduction sections

Review

Pop quiz

- What do you like or do not like about this class?
- Do you have any feedback on how it can be improved?

Introduction section

- First paragraph – a hook and briefly what you will be talking about
- Middle paragraphs – discuss each aspect of your hypothesis, then your justification
- Final paragraph(s) –
  - Re-state your justification in a few sentences
  - State your hypothesis
  - Brief overview of experiment if writing a proposal

Errors in Decision
Type I and Type II

- Type I error
  - We reject the null hypothesis when it is actually true.
  - When alpha = .05, chance of making a type I error is 5%

Errors in Decision (con't.)
Type I and Type II

- Type II error
  - Population means are truly different but results of our experiment do not lead to decision to reject the null
- Probability of type II error is beta or β

Type II error (con't.)

- Probability of type II error related to
  - Alpha level
  - Sample size
  - Effect size—the magnitude of the effect
- Power = 1 - β
  - or 1 – probability of type II error

Power

1 - β

- The ability to detect a difference if it truly exists
- Rule of thumb: power = .80
- Replications
- Meta-analyses

Statistical issues

Typical standards

- Alpha levels of .05, two-tailed
  - Willingness to accept that something is significant when it's really not 5% of the time
- Bonferroni corrections for multiple statistical tests
  - If 10 tests, alpha level for each test should be .005
- Power of .80 or greater

For your proposal

- Majority will be your introduction section
- Methods will include:
  - Procedure, materials
  - Number of participants needed (based on power)
  - What stats you plan to run, including any reliability or validity measurements
- Discussion
  - Brief summary
  - Include a prediction: if your hypothesis is true, what do you expect to happen?
  - What are some possible confounding variables?

Think, pair, share

- Design an experiment to test:
  - Does reaction time decrease with age?
  - How does happiness and personality affect academic performance?
    - Hint: interaction
  - Does interest in a topic improve learning of that topic?
- Write a hypothesis, prediction, and methods section for each
  - You're welcome to google anything you like